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Context matters: Combined influence of participation and intellectual stimulation on the promotion focus–employee creativity relationship

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Summary In this paper, we examined the interactive effects of two contexts—participation and intellectual stimulation, and promotion focus on creativity. On the basis of a multi-organization sample of 213 employees, we tested and found that although promotion focus was positively related to creativity, the relationship between promotion focus and creativity was most positive when both participation and leader intellectual stimulation were high. We discuss the way contexts *in combination* influence employee creativity for promotion-oriented individuals, through increasing decision latitude as well as stimulating and promoting creativity. Copyright © 2011 John Wiley & Sons, Ltd.

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In a competitive environment, creativity matters (Axtell, Holman, Unsworth, Wall, & Waterson, 2000; Mumford & Hunter, 2005). Teasing out what personal and contextual factors (or a combination of factors) elicit in employee creativity is a central and ongoing challenge for organizational researchers (Shalley, Zhou, & Oldham, 2004). Recently, a debate has explored the role of self-regulation, suggesting that self-regulating strategies focused on success, achievement and problem solving are potent sources of employee creativity (Friedman and Förster, 2000, 2001; Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008). Regulatory focus theory describes goal-focused dispositions according to whether individuals adopt a promotion focus, emphasizing individual growth, success and achievement, or a prevention focus, prioritizing individual security, duty and obligation (Higgins, 1997).

In a field setting, regulatory focus is more often than not expressed in teams, following trends towards this way of working (Mueller & Kamdar, 2010). We ask whether against this backdrop, promotion-focused individuals are indeed more creative than their prevention-oriented counterparts, given insights from an experimental work (Friedman & Förster, 2000, 2001). We go beyond this assessment, however, by addressing an area that has received scant attention: the interplay between regulatory focus and the wider organizational context. Despite a burgeoning body of multi-level research (Hirst, Van Knippenberg, & Zhou, 2009; Liao, Liu, & Loi, 2010), questions on how contexts influence the creative expression of individual differences individually and in combination still remain poorly understood. This is a serious omission, as contextual influences rarely play out in isolation; rather, employees often experience multiple initiatives (Johns, 2006) with at times unexpected and disconcerting consequences (Barker, 1993).

The purpose of this research is to develop and test theory-based predictions on how the context influences the relationship between employee regulatory focus and creativity. Drawing upon trait activation theory (Tett & Burnett,

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2003), we predict that the contexts that provide opportunities for individual participation and intellectually stimulate followers are particularly relevant for the creative expression of a promotion focus. Although such contexts provide greater latitude for individual expression, they differ in the extent to which they either allow or, alternatively, encourage individual behaviours. Thus, we theorize that individual participation provides flexibility and opportunities for individuals to voice their opinions but does not necessarily inspire creative actions. In contrast, intellectual stimulation involves the leader posing questions and challenging customary practices. Doing so helps followers develop more detailed strategies on how they will succeed promoting flexible and global processing (De Dreu, Baas & Nijstad, 2008), in turn fostering creativity. To deliver a greater understanding of the contextual interplay between participation and intellectual stimulation, we develop predictions about their individual and combined effects.

We make a number of contributions to the creativity and organizational behaviour literature. Our first contribution is that despite the promise of regulatory focus theory, to our knowledge, no multi-source research has examined the role of regulatory focus in promoting employee creativity in organizations. From a managerial perspective, the lack of research examining this question is surprising, as relatively simple interventions can effectively prime a particular focus (e.g. Crowe & Higgins, 1997; Higgins, Friedman & Shah, 1997). Our second and main contribution is to deliver much greater insight into how multiple contextual influences play out independently and collectively to influence creative expression of individual differences. By examining the combined interaction of two contextual influences, we afford a more accurate representation of the work environment, providing new insights into inconsistencies observed in the literature (Damanpour, 1995; Hirst et al., 2008; Wagner, 1994). In particular, we shed light on why participation—encouraging initiatives often implemented as a tool for enhancing employee performance (Axtell et al., 2000)—does not always deliver the expected results.

Theoretical Background and Hyphoteses

Employee creativity involves the development of practical and new solutions to workplace challenges, providing tangible and useful outcomes for the organization (Amabile, 1988). Outcomes range from incremental developments in a general work environment to radical breakthroughs in a research and development context (Mumford & Gustafson, 1988). Thus, creativity at work typically is not just a process of generating new ideas but as importantly involves problem analysing and problem solving to develop practical solutions to workplace challenges (Unsworth, 2001). Therefore, the extent to which individuals are motivated to succeed in growing their knowledge and overcoming obstacles is likely to be a potent source of creativity. A promotion focus that entails individuals focusing on their ideals—sustaining enthusiasm as well as promoting an exploratory processing style—provides a central foundation for creative behaviour. Thus, it is not surprising that an individual's regulatory focus has been shown to predict creativity in experimental settings (Friedman & Förster, 2000, 2001) as well as in self-ratings of creativity (Neubert et al., 2008). We first outline regulatory focus theory and go on to describe how the context may interact with the creative expression of these individual differences.

Regulatory focus and creativity

Higgins (1987) defined regulatory focus as the process by which people approach desired end states (e.g. happiness) and avoid undesired end states (e.g. pain). There are two distinct regulatory foci: promotion focus versus prevention focus. People with promotion focus are concerned with their hopes, aspirations and wishes. They are motivated by growth and development needs that will lead to the realization of their ideal self (i.e. what they would like to be). In contrast, people with prevention focus are concerned with their duties, obligations or responsibilities. They are motivated by security needs that leads to the realization of their ought self (i.e. what they should be based on duties and responsibilities).

In line with regulatory focus theory, Higgins (1998) proposed that the motivational response and processing style elicited by promotion focus may enhance creativity. That elicited by prevention focus may, on the other hand,

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undermine this outcome. Specifically, promotion-focused people tend to perceive that the environment is benign and use *approach* (as opposed to avoid) as a strategic means in pursuing their goals. Compared with those with prevention focus, they are more willing to adopt risky and exploratory approaches to 'insure hits and insure against errors of omission' (Crowe & Higgins, 1997, p. 117). Thus, promotion-focused people are more likely to generate new ideas and develop new ways of doing things. In contrast, prevention-focused people see the environment as threatening and use avoidance as strategic means in pursuing their prevention goals. Compared with promotion-focused people, they are more likely to apply risk-aversive and conservative processing style to 'insure correct rejections and insure against errors of commission' (Crowe & Higgins, 1997). Thus, prevention-focused people are more likely to resort to established ideas and ways of doing things. Empirical studies in the laboratory setting have generally supported Higgins's hypotheses. For example, Friedman and Förster (2000, 2001) reported that compared with prevention focus, promotion focus was positively related to performance in creative insight tasks and creative generation (i.e. generating distinctive alternative solutions in problem solving). Furthermore, Friedman and Förster (2001) confirmed the hypotheses that promotion focus was related to risky and exploratory processing style and prevention focus was related to risk-aversive and conservative processing style. They explained the findings by suggesting that risky, explorative processing style reduces blocking in memory retrieval, in turn enhancing effectiveness in memory search (for information), thereby promoting creativity. By contrast, conservative and risk-averse processing style elicits memory retrieval blocking, which undermines information encoding and the fluency in idea generation. This explanation is in line with that of Amabile (1996), who posited that divergent thinking and the application of heuristics for the exploration of new pathways are critical in the generation of creative ideas. We expect that the relationship between regulatory focus (promotions focus versus prevention focus) and creativity will be replicated in the field. Thus,

Hypothesis 1a: Promotion focus is positively associated with creativity.

Hypothesis 1b: Prevention focus is negatively associated with creativity.

Regulatory focus and the context

Trait activation theory (Tett & Burnett, 2003) describes how contexts exert subtly different influences on the expression of underlying personality characteristics. Some situations described as releasers provide greater latitude or remove obstacles that constrain the expression of trait-relevant behaviours, whereas other contexts facilitate and encourage the expression of a trait, or make trait-relevant information that already exists more salient. Behaviours are more readily expressed where attention is given to removing obstacles that might prevent the expression of a trait. Conveying that trait expression is anticipated and appreciated offers further scope for any latent propensity to be brought out and channelled (Tett & Burnett, 2003). With this theoretical framing in mind, in this study, we investigate the interactional effects between promotion focus and the context. We do not make a moderation argument for prevention focus because no theory has suggested the presence of these interactions in relation to creativity. Because of their dispositional tendency to fill duties and obligations, prevention-focused employees may expect to follow instructions and be responsive to stimuli that suggest the possibility of making errors or not achieving one's goals. Thus, individual participation and intellectual stimulation are unlikely to stimulate a prevention focus (Higgins, 2000) and so influence their creativity. Our moderation predictions build an understanding of the interplay between contexts.

Promotion-focused individuals, however, are motivated by personal growth, development and success (Higgins, 1998), so work contexts that provide opportunities and support for them to meet these needs will encourage them to express these dispositions, engaging in risk taking and divergent thinking, fostering creativity (Friedman & Förster, 2001). We suggest consideration of contexts that on the one hand allow discretion, enabling greater opportunities for expression, and on the other hand encourage and stimulate promotion-focused behaviour. Accordingly, we have identified two contextual factors that are relevant to the expression of promotion focus: individual participation and intellectual stimulation.

DOI: 10.1002/job

Individual participation refers to employees' perceived opportunities to engage in decision-making processes (Lam, Chen, & Schaubroeck, 2002). In high participation contexts, managers provide employees with greater discretion to contribute to decision-making processes as opposed to using structural power to push policies and decisions through. Employees are more able to determine how things should be organized and carried out in a context that provides latitude for the expression of individual differences (Arnold, Arad, Rhoades & Drasgow, 2000; Scholl, 1999). Thus, participation does not necessarily suggest a desirable set of practices; rather, it reduces the structural constraints that employees may experience at work. Employees are given the opportunity but not necessarily the coaching or guidance on how to resolve challenges they experience in the workplace.

Literature has described the amplifying effects of participative and empowering practices that increase the variation between different individual dispositions, enabling individuals to more readily express preferred ways of working (Mathieu, Ahearne, & Taylor, 2007). Thus, the effects of participation may vary considerably according to the individual's disposition and the extent to which he or she feels able to embrace the increased scope for new stimuli offered through this way of working (Ahearne, Mathieu, & Rapp, 2005). Participation seems to bring out the best in those inclined to proactively engage in problem solving but to have little or no effect on others (Fuller, Marler & Hester, 2006; Hirst, Knippenberg, Chen & Sacramento, 2011; Mathieu et al., 2007; Parker & Sprigg, 1999). For these reasons, it seems important to understand the ways in which participation provides scope for the expression of individual differences. For promotion-focused individuals, participation should appeal to their desires to achieve personal goals of success and accomplishment providing the opportunity to explore, experiment and seek out new solutions (Friedman & Förster, 2001). By contrast, low levels of participation diminish promotion-focused individuals' control and possibilities for expression removing or reducing opportunities to engage in exploratory creative practices. Thus, we predict that as participation increases, a promotion-focused individual's expectancies and opportunities to succeed are unfolded and that this leads to a stronger positive relationship between promotion focus and creativity.

Hypothesis 2: Individual participation moderates the positive relationship between promotion focus and creativity (H1a) such that this relationship will be strongest and most positive when individual participation is high rather than low.

Intellectual stimulation encompasses leadership behaviours that increase followers' interest in and awareness of problems, developing their ability and propensity to think about problems in new ways (Rafferty & Griffin, 2004, p. 333). The intellectual stimulation offered by supervisors constitutes a social cue to encourage employees to explore new methods or pursue innovative problem-solving approaches (Burns, 1978; Rafferty & Griffin, 2004). When managers help employees engage in problem-solving activities, suggesting alternative perspectives, this supports and challenges employees to consider different approaches. This is likely to enhance employees' problem-solving capabilities (Scholl, 1999). By the exercise of intellectual stimulation, supervisors broaden employees' existing skill profiles, develop their problem-solving skills and, as a by-product, nurture employees' growth and achievement in the workplace. Furthermore, intellectual stimulation supports an open and forward-thinking strategy in the pursuit of goals. Accordingly, high levels of intellectual stimulation will support and stimulate employees to grapple with less routine challenges and problems (Ahearne et al., 2005; Srivastava, Bartol, & Locke, 2006) and thereby offer creative ideas for product/service improvements. Each of these activities resounds with the motivations of promotion-focused employees and at the same time provides them the skills to grapple with these challenges, resulting in even stronger creative results. By contrast, low levels of intellectual stimulation will lend little encouragement or inspiration for promotion-focused individuals, diminishing their motivation to face the challenges arising from problem-solving endeavours.

Hypothesis 3: Intellectual stimulation moderates the positive relationship between promotion focus and creativity (H1a) such that this relationship will be strongest and most positive when intellectual stimulation is high rather than low.

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So far, we have discussed contextual influences independently. Given the complexity of the work environment, multiple contextual factors may interact with each other, leading to markedly different consequences for employee creativity (Shalley et al., 2004). Intellectual stimulation, in effect, encourages and expresses an appreciation of new ways of working. This strikes a chord with the orientation that promotion-focused individuals have towards exploration and experimentation. Participation, by contrast, allows and enables greater expression but unlike intellectual stimulation does not necessarily encourage specific behaviours. Therefore, promotion-focused employees will find the context most favourable for their creative endeavours when high levels of individual participation are accompanied by intellectual stimulation. In this setting, the leader encourages exploratory divergent activities, and the context enables greater opportunities to engage in these creativity-promoting behaviours.

On the other hand, when individual participation and intellectual stimulation are both low, promotion-focused employees will find that the context is both constraining and new ideas are not encouraged, leading to lower levels of creativity. When only intellectual stimulation is high, employees high in promotion focus will still be encouraged to engage in creative endeavours even though the context affords fewer opportunities to engage in exploratory practices. Leaders who intellectually stimulate their followers both by their behaviour and position of influence will serve as role models, partially ameliorating structural constraints. In this setting, an intellectually stimulating supervisor encourages promotion-focused problem-solving processes as well as related divergent thinking (Kark & Van Dijk, 2007), albeit with limited latitude. Thus, employees high in promotion focus will demonstrate moderate levels of creativity, lower than when they enjoy a larger extent of job latitude (high individual participation).

In comparison, when supervisor intellectual stimulation is low and only individual participation is high, employees high in promotion focus may experience distraction or frustration in the absence of supervisory encouragement and guidance (intellectual stimulation). In this context, the individual is provided with latitude and options to try different approaches but an absence of leadership encouragement. The absence of intellectual stimulation implies that employees exploratory or creative exploratory endeavours fall on 'deaf ears' such that there is little appetite or enthusiasm to look at things differently, for example, to challenge common practices and to present different ways of doing things. Moreover, despite opportunities for participation, without more overt cues from their supervisors, the lack of leadership stimulation may suggest that the context is not, in effect, encouraging exploration and seeking new ways of solving problems. We suspect that in this setting, the relationship between promotion focus and creativity will be negligible. Thus, a promotion-focused orientation will not be channelled into creative problem solving. Therefore, we suggest that

> *Hypothesis 4*: Promotion focus, individual participation and intellectual stimulation interact to affect creativity such that promotion-focused employees will exhibit the strongest positive relationship with creativity when both individual participation and intellectual stimulation are high. Moderate creativity is expected when promotion-focused employees have high intellectual stimulation but low individual participation. In conditions where intellectual stimulation is low and participation is high, promotion focus will have a weak or negative association with creativity.

Method

Sample and procedures

Employees of three organizations in the People's Republic of China comprised the participants of this study. All three organizations are in manufacturing sector, producing electronics products for industrial or household uses. We approached the Human Resources (HR) managers in each of the companies and asked them to identify

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individual work units within the company to participate in the research. To obtain a heterogeneous sample including production, marketing and sales, finance and accounting, logistics, administrative and HR departments, we recruited units across the organizations. This procedure provided 60 work units comprising 320 employees. We informed all the employees units of this survey through the HR department before we distributed the questionnaires. We assigned a survey coordinator by each HR department to help the first author distribute questionnaire packages to the respondents. We used two sets of questionnaire: one for subordinates to rate the independent variables and another for their supervisors to rate subordinates' creativity. A cover letter attached to each of the questionnaires informed the respondents of the confidentiality of their responses and the voluntary nature of their participation in the survey. We also assured them that their personal-coded ID (provided at the top right hand corner of the questionnaire) would only be used to match their responses to the ratings provided by their supervisors. We received completed and usable questionnaires from 213 subordinates and 49 supervisors, with a response rate of 67 per cent for subordinates and 82 per cent for supervisors. Of the 213 respondents, 60 per cent were male. The respondents reported an average age of 28.23 years ($SD = 5.10$), average job tenure of 2.91 years ($SD = 2.68$) and an average education of 14.35 years ($SD = 1.48$). The participants were from different functions of the companies: administrative/HR (79 respondents, 37 per cent), production (43 respondents, 20 per cent), finance/accounting (46 respondents, 22 per cent), marketing/logistics (26 respondents, 12 per cent), and quality control/others (19 respondents, 9 per cent), including four respondents (2 per cent) who did not indicate their job function.

Measures

Following procedures suggested by Brislin (1980), we back translated into Chinese the questionnaire that was developed originally in English. Then, we back translated the Chinese version of the questionnaire into English. A third person, an English native speaker compared the original version with the back translation. On the basis of his comments, we reworded a few items to ensure clarity.

Promotion focus

We used a 4-item scale adapted from Lockwood et al. (2002) to measure promotion focus. The items are as follows: *In general, I am focused on achieving positive outcomes in my life*, *I typically focus on the successes I hope to achieve in the future*, *I often think about how I will achieve my work goals* and *Overall, I am more orientated towards achieving success than preventing failure*. Response options ranged from (1) *strongly disagree* to (9) *strongly agree*. The scale's alpha reliability is .69.

Prevention focus

We used a 3-item scale adapted from Lockwood et al. (2002) to measure prevention focus. The items are as follows: *I often worry that I will fail to accomplish my work goals*, *I am anxious that I will fall short of my responsibilities and obligations* and *I am more orientated towards preventing losses than I am towards achieving gains*. Response options ranged from (1) *strongly disagree* to (9) *strongly agree*. The scale's alpha reliability is .69.

Intellectual stimulation

We used a 3-item scale developed by Rafferty and Griffin (2004) to measure intellectual stimulation. The items are as follows: *My supervisor challenges me to think about old problems in new ways*, *My supervisor has challenged me to rethink some of my basic assumptions about my work* and *My supervisor has forced me to rethink some things that I have never questioned before*. Response options ranged from (1) *strongly disagree* to (7) *strongly agree*. The scale's alpha reliability is .86.

DOI: 10.1002/job

Individual participation

We used a 5-item scale developed by Lam et al. (2002) to measure opportunity for individual participation. The items are as follows: *In this organization, I have high degree of influence in company decisions* and *In this organisation, I often participate in decisions regarding my job*, *In this organization, I have high degree of influence in the decisions affecting me*, *In this organization, I can participate in setting new company policies* and *In this organization, my views have a real influence in company decisions*. Response options ranged from (1) *strongly disagree* to (5) *strongly agree*. The scale's alpha reliability is .83.

Creativity

We used a 13-item scale developed by Zhou and George (2001) to measure creativity. Supervisors rated the creative performance for each of their subordinates who participated in the survey. Sample items are as follows: *This employee is a good source of creative ideas* and *This employee often has a fresh approach to a problem*. Response options ranged from (1) *not at all* to (5) *to a great extent*. The scale's alpha reliability is .96.

Control variables

We controlled for individual education level and job tenure, because they provide proxies for knowledge and experience, respectively (cf. Tierney & Farmer, 2002), and have been related to individual creativity (Amabile, 1983; Ford, 1996; Woodman, Sawyer, & Griffin, 1993). A single item each requested respondents to indicate years of formal education and years worked for their present organizations. Also, reflecting the heterogeneity of the multi-organization sample, we controlled for job type and created four dummy variables to represent five job functions: (1) administrative/HR; (2) production; (3) finance/accounting; (4) marketing/logistics; and (5) quality control/others.

Data analysis

Because the data had a nested structure, that is, leaders rated the creativity of their direct reports in each of the units, we used hierarchical linear modelling (HLM) to test the hypotheses. This approach is preferable to standard multivariate approach because it takes into account the non-independence of data within work groups as HLM accounts for nested data, while maintaining levels of analysis (Bryk & Raudenbush, 1992). We grand mean centred the independent individual-level variables (i.e. promotion focus, prevention focus, job tenure, education) as suggested by Hofmann and Gavin (1998). The intraclass correlations (ICCs) for intellectual stimulation and individual participation were both $-.01$. Low scores on ICCs indicated that these were most appropriately treated as individual-level data (Bliese, 2000). Thus, consistent with theory and the results, we analysed the moderating variables at the individual level.

As all independent variables were provided by employees, common method variance could potentially influence the relationships examined (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Consequently, we performed a confirmatory factor analysis using AMOS 7.0 (Amos Development Corporation, Spring House, PA) to examine the distinctiveness of the study variables. The hypothesized 4-factor model (whereby promotion focus, prevention focus, individual participation and supervisor intellectual stimulation were treated as four independent factors) was compared with four alternative nested models: (1) a 3-factor model_1 (combining promotion focus and prevention focus), (2) a 3-factor model_2 (combining individual participation and supervisor's intellectual stimulation), (3) a 2-factor model (combining promotion focus and prevention focus and combining individual participation and supervisor's intellectual stimulation) and (4) a 1-factor model_1 (combining all four variables). The hypothesized 4-factor model showed a better fit to the data ($\chi^2 = 86.01$, $df = 59$, $p > .01$, $\chi^2/df = 1.46$, $TLI = 0.97$, $CFI = 0.98$, $RMSEA = 0.05$) than any other combination of factors. The confirmatory factor analysis results indicated support for the hypothesized 4-factor model and, therefore, the distinctiveness of the variables in this study.[1]

[1]We ran additional analysis on the interactive effects of prevention focus and the two contextual factors. The results showed that the interaction effects were non-significant for prevention focus.

DOI: 10.1002/job

Lastly, following Fornell and Larcker (1981), we examined the convergent and discriminant validities of the four independent variables. For convergent validity, we calculated the composite reliability for each scale. The composite reliability all exceeded .70, the minimum cut-off value, indicating an adequate level of convergent validity (Fornell & Larcker, 1981). For discriminant validity, we compared the average variance extracted of each variable with its shared variance with all other variables (Farrell, 2010). The variance shared among two variables was always less than the variance in the items explained by each of these variables, indicating good discriminant validity (Fornell & Larcker, 1981). The aforementioned statistical tests demonstrate that the scales for our study have a satisfactory level of validity and reliability.

Results

Table 1 shows the descriptive statistics, internal consistency reliabilities and intercorrelations of all study variables. Promotion focus was positively correlated to creativity but non-significantly ($r = .13$, $p = ns$). Prevention focus was significantly negatively correlated with creativity ($r = -.16$, $p < .05$). Promotion focus and prevention focus were not correlated ($r = -.05$, $p = ns$).

We first conducted a one-way analysis of variance to test whether there was significant between-group variance in employee creativity. Using HLM, we estimated a null model in which no predictors were specified for either the Level 1 or the Level 2. The results confirmed that there was significant between-group variance ($\chi^2_{48} = 231.79$, $p < .001$). Furthermore, ICC1 = .47, indicating that 47 per cent of the variance in employee creativity resided between groups and thus warranting the use of HLM in our analyses.

Main effects

As shown in Table 2, in Model 1, we estimated a model with controls and promotion focus to test Hypothesis 1a. We used a similar procedure to test Hypothesis 1b (Model 2), where we estimated a model with controls and prevention focus. Whereas promotion focus was positively related to employee creativity ($\gamma = .06$, $SD = 0.03$, $p < .05$),

Table 1. Means, *SD* and intercorrelations among study variables.

		Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11
1	Administrative/HR	—	—	—										
2	Production	—	—	−.38**										
3	Marketing/ logistics	—	—	−.28**	−.18**									
4	Finance/accounting	—	—	−.40**	−.27**	−.19**								
5	Education	14.35	1.48	.03	−.39**	.15*	.02							
6	Tenure	2.91	2.68	.04	.12	−.05	−.10	−.06						
7	Promotion focus	6.89	1.17	−.03	.11	.09	−.09	−.04	−.01	**.69**				
8	Prevention focus	4.62	1.65	−.02	.01	−.01	.00	−.05	−.05	−.05	**.69**			
9	Intellectual stimulation	3.58	1.01	.02	.04	−.04	−.04	−.03	−.04	.06	.10	**.86**		
10	Individual participation	1.85	0.08	−.03	−.03	.10	−.05	.02	.08	−.02	.05	.31	**.83**	
11	Creativity	2.96	0.65	.01	.05	.05	−.12	.07	.16	.13	−.16	.00	.06	**.96**

Note: $N = 213$ (group number = 49). Cronbach's coefficient alphas are in bold and underlined on the diagonal
*$p < .05$; **$p < .01$.

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Table 2. Hierarchical linear modelling results for regulatory focus main effects and interactive effects.

Variables	Model 1	Model 2	Model 3
Administrative/HR	.04(.08)	.03(.07)	.03(.07)
Production	.00(.10)	−.02(.09)	.01(.08)
Marketing/logistics	.01(.06)	.00(.07)	.03(.06)
Finance/accounting	.01(.08)	−.01(.08)	.02(.07)
Education	.06(.04)	.06(.04)	.09*(.04)
Tenure	.16**(.05)	.17**(.06)	.17**(.05)
Promotion focus	.06*(.03)	—	.03(.03)
Prevention focus	—	−.05*(.02)	—
Individual participation	—	—	.05(.05)
Intellectual stimulation	—	—	−.02(.02)
ΔR^2	*.15*	*.16*	*.15*
Promotion focus × Individual participation	—	—	.00(.04)
Promotion focus × Intellectual stimulation	—	—	.08*(.04)
Individual participation × Intellectual stimulation			−.03(.02)
ΔR^2			*.11*
Promotion focus × Individual participation × Intellectual stimulation			.05*(.02)
ΔR^2			*.02*
Deviance	369.71	367.81	377.98

Note: Entries corresponding to the predicting variables are estimations of the fixed effects with robust standard errors. For individual level variables, $N = 213$ (group number = 49); ΔR^2 values were obtained following Snijders and Bosker's (1999).
*$p < .05$; **$p < .01$; ***$p < .001$.

prevention focus was negatively related to employee creativity ($\gamma = -.05$, $SD = 0.02$, $p < .05$). Thus, both Hypothesis 1a and Hypothesis 1b were supported.

Moderation hypotheses

To test Hypotheses 2, 3 and 4, we entered the control variables, promotion focus, individual participation, intellectual stimulation, and three 2-way interaction terms (i.e. Promotion focus × Individual participation, Promotion focus Intellectual stimulation, Individual participation × Intellectual stimulation) and a 3-way interaction term (Promotion focus × Individual participation × Intellectual stimulation) (Model 3). Among the three 2-way interaction terms, Promotion focus × Intellectual stimulation was significant ($\gamma = .08$, $SD = 0.04$, $p < .05$), whereas Promotion focus

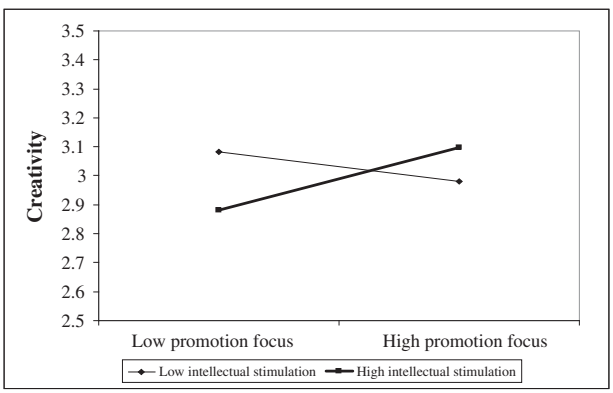

Figure 1. The interactive effect of promotion focus and supervisor intellectual stimulation on creativity

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Individual participation ($\gamma = .00$, $SD = 0.04$, $p > .05$) and Individual participation × Intellectual stimulation ($\gamma = -.03$, $SD = 0.02$, $p > .05$) were both non-significant. Thus, Hypothesis 2 was rejected. Lastly, the 3-way interaction term was significant ($\gamma = .05$, $SD = 0.02$, $p < .05$).[2]

To interpret the nature of the significant 2-way interaction (Promotion focus × Intellectual stimulation), we developed equations for the relationship between promotion focus and employee creativity at high and low levels of intellectual stimulation. Following Cohen and Cohen (1983), we defined high and low values as plus and minus 1 *SD* from the mean. Figure 1 shows that the form of the interaction was as predicted in that the relationship between promotion focus and employee creativity was stronger when intellectual stimulation was high rather than low. Indeed, a simple slope test showed that the relationship between promotion focus and creativity was significant when intellectual stimulation was high ($B = .11$, $SD = 0.05$, $t = 2.29$, $p < .01$), but non-significant when intellectual stimulation was low ($B = -.05$, $SD = 0.05$, $t = 1.01$, $p = ns$). Thus, hypothesis 3 was supported.

To interpret the nature of the 3-way interaction, we computed and plotted the simple slopes of creativity on promotion focus at high (+1 *SD*) and low (−1 *SD*) levels of individual participation and intellectual stimulation (i.e. high individual participation and high intellectual stimulation, low individual participation low intellectual stimulation, low individual participation high intellectual stimulation and high individual participation and low intellectual stimulation) (Aiken & West, 1991). Figure 2 revealed that promotion focus has the strongest relationship with creativity when individual participation and intellectual stimulation are both high. Then, we compared whether individual simple slopes differ significantly from each other. This was achieved by testing whether the ratio of the differences between a pair of slopes and its standard error differs significantly from zero (Dawson & Richter, 2006). Specifically, we tested whether the simple slope for high individual participation and high intellectual stimulation was significantly different from the simple slopes of all other combinations. The results showed that the simple slope for high individual participation and high intellectual stimulation differed significantly from those for low participation and low intellectual stimulation ($t = 3.08$, $p < .01$), and high individual participation, low intellectual stimulation ($t = 2.70$, $p < .01$). When only intellectual stimulation was high, the slope difference was positive however non-significant ($t = 1.14$, $p > .05$). These results together with Figure 2 provided support for Hypothesis 4.

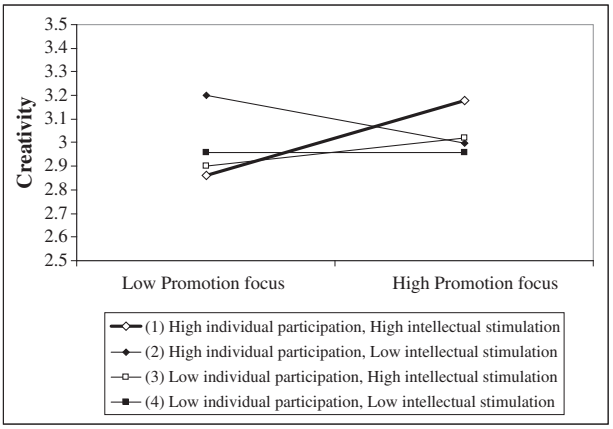

Figure 2. The interactive effect of promotion focus, individual participation and supervisor intellectual stimulation on creativity

[2]The fit statistics for the four alternative models are as follows: The 3-factor model_1($\chi^2 = 215.16$, $df = 62$, $p < .001$, $\chi^2/df = 3.47$, $TLI = 0.86$, $CFI = 0.89$, $RMSEA = 0.11$), the 3-factor model_2 ($\chi^2 = 360.55$, $df = 62$, $p < .001$, $\chi^2/df = 5.82$, $TLI = 0.72$, $CFI = 0.78$, $RMSEA = 0.15$), the 2-factor model ($\chi^2 = 488.50$, $df = 64$, $p < .001$, $\chi^2/df = 7.63$, $TLI = 0.61$, $CFI = 0.68$, $RMSEA = 0.18$), and the 1-factor model ($\chi^2 = 852.79$, $df = 65$, $p < .001$, $\chi^2/df = 13.12$, $TLI = 0.29$, $CFI = 0.41$, $RMSEA = 0.24$).

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Discussion

Our research advances the study of contextual influences on the creative expression of individual differences. Unlike prior multi-level research, which has by and large examined a single contextual influence in isolation, we studied the individual and combined interactive influence of two factors. In line with trait activation theory (Tett & Burnett, 2003), this approach enabled us to shed new light on prior inconsistencies observed by researchers and practitioners. Moreover, the results are concordant with recent research in the empowerment field that concludes that participation has variable benefits for different individuals (Mathieu et al., 2007) and different contexts (Hirst et al., 2008). Although leader intellectual stimulation enhanced the positive association between promotion focus and employee creativity under varying conditions, the same cannot be said for individual participation. In fact, we observed that the benefits of participation depended on whether the individual was intellectually stimulated by the leader. When individuals were intellectually stimulated and provided with opportunities to participate in decision making, promotion focus had the strongest positive relationship with creativity. In the absence of leader intellectual stimulation, high levels of participation were associated with promotion focus, having a weak negative relationship with creativity.

Notwithstanding the prior contributions, this study, for the first time, examined the relationship between regulatory focus and creativity using multi-source and multi-organizational data in a field setting. By inference, we also provide support for the transportability of European American-derived theory when studied in a heterogeneous sample from the People's Republic of China.

Theoretical implications

Our work adds to the creativity and wider organizational behaviour literatures in several respects. Applying the same source analyses as those of Neubert et al. (2008), we conclude using multi-source and multi-organizational data that promotion-focused individuals are more inclined to deliver creative outcomes than their prevention-focused counterparts. This result extends regulatory focus theory from the explanation of productivity and safety (Wallace & Chen, 2006) to employee creativity. The main contribution of this study, however, lies in our analysis of contextual influences that, in combination, interact with an individual's regulatory focus to predict creativity. Although participation provides the scope but not the impetus for promotion-focused people to engage in creative activities, our work suggests that intellectual stimulation encourages employees to undertake complex problem solving in their day-to-day work. For these reasons, we find that employees who have little or no opportunities for participation, but high expectations from their leaders in terms of their contributions to problem solving, are likely to be creative despite the context being in other respects less than ideal. Such employees may find ways to circumvent the opportunities to participate in organizational decision-making processes, for example, trying new approaches that are not necessarily mandated by the organization.

By contrast, those who have opportunities for participation, but little or no intellectual stimulation from their supervisors, are likely to feel frustrated by the perceived lack of mental interaction and encouragement to foster their creative endeavours. This sense might be even more apparent where they are exposed (through participation) to multiple stimuli, and the *latitude* for a much more challenging and rewarding work role, yet experience little leadership encouragement to do so. Employees in these circumstances may feel frustrated or disheartened (or both) and may therefore become less creative. This strikes a chord with extant research showing that participation achieves intended outcomes to the extent that other facets of the context (in our case leader's stimulating behaviours) clearly convey what the performance expectations of individuals are (Axtell et al., 2000; Lam et al., 2002). More broadly, our results illustrate the durability of socio-technical systems theory (Cherns, 1987; Clegg, 2000) and its prescriptions that the effectiveness of a managerial intervention is contingent on the alignment of different organizational systems.

Finally, we show that promotion-oriented individuals are most likely to exhibit creative behaviours when both participation and intellectual stimulation are high. Initiatives such as individual participation are best implemented when complemented by the encouragement and support from supervisors, to bring out promotion-focused

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employee's creativity potential. We also advance interactionist frameworks (George & Zhou, 2001; Oldham & Cummings, 1996) by demonstrating that the creative benefits of promotion focus, like other individual differences (e.g. personality, goal orientation and creative self-efficacy), are contingent on the context.

Practical implications

Despite the widespread application of employee-participation practices, these interventions have delivered, at best, mixed results (Forrester, 2000). Our findings not only concur with the observation that programs empowering employees are only as effective in achieving their desired results as the extent to which they are supported by the leadership context (Detert & Burris, 2007). Extending this point, we observe front line leaders playing a key role in determining the consequences of empowerment practice. Without these leaders' engagement, initiatives that seek to empower and encourage participation have negligible and even detrimental results for creativity.

Whereas an emphasis on promotion focus may enhance individual creativity, this study highlights the importance of understanding the interactions between the person and the environment and between contextual factors. It is the combination of individual disposition and the joint influence of the context (both participation and intellectual stimulation) that yields the stronger association with creativity. An emphasis on promotion focus to stimulate individual creativity should therefore take into account individuals' inclination to engage in these activities in combination with the context. At the individual level, this could include personnel selection of employees according to their promotion focus. For example, it may be possible to design interview schedules, work-sampling activities or employee-selection tests that capture motivational orientations indicative of promotion-focus so that people can be selected according to their orientation towards creativity. The significant negative relationship between prevention focus and creativity suggests that personnel selection should also consider the negative effects of prevention focus in jobs where employee-divergent thinking and risk-taking behaviours are critical.

More importantly, practitioners need to critically assess the extent to which the work environment is likely to foster or alternatively impede employee's creativity. Specifically, supervisors play a crucial role. Supervisors cannot only ameliorate structural confines but also maximize the benefits of participative management in promoting employee creativity. On the other hand, organizations should apply employee-participation practices with care. Our results reveal that although employee participation may open channels for employees to voice their ideas, such practices creatively benefit promotion-focused employees only when they experience mental or intellectual stimulation from their supervisor. Moreover, employee-participation initiatives may even be detrimental for creatively inclined individuals if other aspects of the context are less than encouraging of these activities.

Limitations and directions for future research

First, the reliability of the regulatory focus measurement was lower than ideal. Low reliability may be attributable to cultural factors in that culture values of our participants may have influenced their understanding survey items (e.g. success or responsibility). As Schwartz (1999, p. 26) suggested, cultural values form 'the bases for the norms that tell people what is appropriate in various situations'. The individual's responsibility towards the collective in China is highly valued—perhaps more so than the achievement of a particular individual. Consequently, the survey items may have some noise among Chinese employees, resulting in lower reliability. It should also be remembered that low reliability tends to attenuate the relationship between variable and reduce analysis power, which, in turn, potentially 'masking' significant interaction (McClelland & Judd, 1993). Thus, our results may underestimate the true strength of these interactions. Although our hypothesis testing is in line with the findings in experimental studies and all hypotheses but one (Hypothesis 2) received support, future research is needed to refine the current regulatory focus measures for the Chinese context. Although it is possible that given

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the field study design that the predictor (regulatory focus) and the moderators (individual participation and intellectual stimulation) may positively enhance each other and so confound the results, our data provide little evidence to support the prior assertion. The greatest correlation between promotion focus and either of the contextual variables was $r = .06$ ($p > .05$).

Research in laboratory settings has shown that regulatory focus is responsive to simple interventions (e.g. Cropanzano, Paddock, Rupp, Bagger, & Baldwin, 2008; Crowe & Higgins, 1997; Friedman & Förster, 2001). Thus, theorists have suggested that organizational factors such as rewards and positive feedback may be effective in facilitating employee-promotion focus (Brockner & Higgins, 2001; Kark & Van Dijk, 2007). Research is required to test the prior assumptions.

Hypothesis 2 did not receive support. This might have been attributed to the fact that our sample was drawn from diverse work environments, where the practice of individual participation may not automatically cue employees to challenge *status quo* and engage in creative activities without explicit requirements for creativity. Perhaps, in addition to a general employee-involvement system, empowerment needs to be enacted by supervisors (e.g. Hirst et al., 2009; Zhang & Bartol, 2010) to spice up employee creativity. Whereas the former opens up the channels for employee involvement in general management issues, the latter may specifically target at task-related issues. Future research may test this hypothesis in different contexts. Although the simple slope for high participation and low stimulation appeared to be negative in Figure 2, the complexity of the 3-way interaction (Dawson & Richter, 2006) and current statistical tools does not allow us to ascertain whether the slope is negative or non-significant. Future research should further probe the effects of this interaction.

Another fruitful direction for future research would be to explore other contextual factors that may serve to encourage the creative tendencies of employees who are high in promotion focus. More importantly, we need to understand how not just one factor but the combined influence of several contextual factors plays out, to more fully represent the workplace setting. This is particularly important, as this study, like prior research (e.g. George & Zhou, 2001; Baer & Oldham, 2006) has illustrated that the combination is not as intuitive as one might suspect. Developing theory to understand these predictions is both a need and an opportunity for future research.

Finally, cultural influence is posited to influence individual regulatory focus, which subsequently determines individuals' reactions to social influences (Higgins, 1996). Interestingly, our study suggests that even in a collective culture like China, individual differences in terms of promotion focus, for example, have important implications for creativity, similar to those findings based on samples from developed countries (Neubert et al., 2008). Extending the current framework, we suggest that a culture such as China characterized by higher uncertainty avoidance than the USA may be more likely to invite the expression of prevention focus at the expense of creativity. That is, all other things being equal, prevention orientation may have a stronger impact on creativity in, for instance, China than in the USA. Similarly, the more collectivistic orientation of a country like China as compared with, for instance, the USA may also play a role. Promotion focus has a strong connotation of individual success and achievement, which may be more easily activated in an individualistic than a collectivistic culture. The more general point is that culture can be seen as context too, and as such, cultural context may influence regulatory focus–creativity relationships. Future research may test this cross-cultural difference hypothesis with samples from multiple countries. Notwithstanding limitations, our research provides support for the usefulness of regulatory focus theory and trait activation theory in explaining the motivation–creativity relationship. Our findings should encourage future researchers to include regulatory focus in their models of creativity in organizations.

Although individual participation accompanied by supervisor intellectual stimulation enhances the positive linkage between promotion focus and creativity, participation without leadership stimulation may result in the prior association being non-significant or negative. In revealing this point, our data illustrate why empowerment initiatives that encourage participation and spark discussion have differing creative benefits for different individuals. Most pertinently, our research testifies to the value of encouraging and intellectually stimulating individuals to focus on achieving their goals as a way of facilitating employee creativity.

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References

Ahearne, M., Mathieu, J., & Rapp, A. (2005). To empower or not to empower your sales force? An empirical examination of influence of leadership empowerment behavior on customer satisfaction and performance. *Journal of Applied Psychology*, *90*(5), 945–955.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications, Inc.

Amabile, T. M. (1983). *The social psychology of creativity*. New York: Springer-Verlag.

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research and Organizational Behavior*, *10*, 123–167.

Amabile, T. M. (1996). *Creativity in context*. Boulder, CO: Westview.

Arnold, J. A., Arad, S., Rhoades, J. A., & Drasgow, F. (2000). The empowering leadership questionnaire: The construction and validation of a new scale for measuring leader behaviors. *Journal of Organizational Behavior*, *21*(3), 249–269.

Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., & Waterson, P. E. (2000). Shopfloor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational & Organizational Psychology*, *73*(3), 265–385.

Baer, M., & Oldham, G. R. (2006). The curvilinear relation between experienced creative time pressure and creativity: Moderating effects of openness to experience and support for creativity. *Journal of Applied Psychology*, *91*(4), 963–970.

Barker, J. R. (1993). Tightening the iron cage: Concertive control in self-managing teams. *Administrative Science Quarterly*, *38*, 408–437.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein, & S. W.J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions* (pp. 349–381). San Francisco, CA: Jossey-Bass Inc., A Wiley Company.

Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis, & J. W. Berry (Eds.), *Handbook of cross-cultural psychology: Methodology* (Vol. *2*, pp. 349–444). Boston, MA: Allyn & Bacon.

Brockner, J., & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational Behavior and Human Decision Processes*, *86*(1), 35–66.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage Publications, Inc.

Burns, J. M. (1978). *Leadership*. New York: Harper & Row.

Cherns, A. (1987). Principles of sociotechnical design revisited. *Human Relations*, *40*(3), 153–162.

Clegg, C. W. (2000). Sociotechnical principles for system design. *Applied Ergonomics*, *31*(5), 463–477.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analyses for the behavioral sciences*. Hillsdale, NJ: Erlbaum.

Cropanzano, R., Paddock, L., Rupp, D. E., Bagger, J., & Baldwin, A. (2008). How regulatory focus impacts the process-by-outcome interaction for perceived fairness and emotions. *Organizational Behavior and Human Decision Processes*, *105*, 36–51.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, *69*(2), 117–132.

DOI: 10.1002/job

Damanpour, F. (1995). Is your creative organization innovative? In C. M. Ford, & D. A. Gioia (Eds.), *Creative action in organizations: Ivory tower visions and real world voices* (pp. 125–130) Newbury Park, CA: Sage Publications, Inc.

Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology*, *91*(4), 917–926.

De Dreu, C. K. W., Baas, M., & Nijstad, B. A. (2008). Hedonic tone and activation level in the mood–creativity link: Toward a dual pathway to creativity model. *Journal of Personality and Social Psychology*, *94*(5), 739–756.

Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open? *Academy of Management Journal*, *50*(4), 869–884.

Farrell, A. M. (2010). Insufficient discrimant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research*, *63*, 324–327.

Ford, C. M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review*, *21*(4), 1112–1142.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Forrester, R. (2000). Empowerment: Rejuvenating a potent idea. *The Academy of Management Executive 14*(3), 67–80.

Friedman, R. S., & Förster, J. (2000). The effects of approach and avoidance motor actions on the elements of creative insight. *Journal of Personality & Social Psychology*, *79*(4), 477–492.

Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality & Social Psychology*, *81*(6), 1001–1013.

Fuller, J. B., Marler, L. E., & Hester, K. (2006). Promoting felt responsibility for constructive change and proactive behavior: Exploring aspects of an elaborated model of work design. *Journal of Organizational Behavior*, *27*(8), 1089–1120.

George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, *86*(3), 513–524.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, *94*, 319–340.

Higgins, E. T. (1996). The 'self digest': Self-knowledge serving self-regulatory functions. *Journal of Personality and Social Psychology*, *71*(6), 1062–1083.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologists*, *52*, 1280–1300.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. *30*, pp. 1–46). New York: Academic Press.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist*, *55*(11), 1217–1230.

Higgins, E. T., Friedman, R., & Shah, J. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, *72*(3), 515–525.

Hirst, G., Budwar, P., Cooper, B., West, M. A., Long, C., Xu, C., et al. (2008). Cultural and contextual variations in autonomous climate, stress and organizational productivity relationships. *The Journal of International Business Studies*, *39*, 1343–1358.

Hirst, G., Knippenberg, D. V., Chen, C.-H., & Sacramento, C. A. (2011). How does bureaucracy impact on individual creativity? A cross-level investigation of team contextual influences on goal orientation–creativity relationships. *Academy of Management Journal*, *54*(3), 624–641.

Hirst, G., Van Knippenberg, D., & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal orientation, team learning behavior, and individual creativity. *Academy of Management Journal*, *52*(2), 280–293.

Hofmann, D. A., & Gavin, M. B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, *24*(5), 623–641.

Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review*, *31*(2), 386–408.

Kark, R., & Van Dijk, D. (2007). Motivation to lead, motivation to follow: The role of the self-regulatory focus in leadership processes. *Academy of Management Review*, *32*(2), 500–528.

Lam, S. S. K., Chen, X.-P., & Schaubroeck, J. (2002). Participative decision making and employee performance in different cultures: The moderating effects of allocentrism/idiocentrism and efficacy. *Academy of Management Journal*, *45*(5), 905–914.

Liao, H., Liu, D., & Loi, R. (2010). Looking at both sides of the social exchange coin: A social cognitive perspective on the joint effects of relationship quality and differentiation on creativity. *Academy of Management Journal*, *53*(5), 1090–1109.

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*(4), 854–864.

Mathieu, J. E., Ahearne, M., & Taylor, S. R. (2007). A longitudinal cross-level model of leader and salesperson influences on sales force technology use and performance. *Journal of Applied Psychology*, *92*(2), 528–537.

McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, *114*(2), 376–390.

Mueller, J. S., & Kamdar, D. (2010). Why seeking help from teammates is a blessing and a curse: A theory of help seeking and individual creativity in team contexts. *Journal of Applied Psychology*, *96*, 263–276.

DOI: 10.1002/job

Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, *103*(1), 27–43.
Mumford, M. D., & Hunter, S. T. (2005). Innovation in organizations: A multi-level perspective on creativity. In F. J. Yammarino, & F. Dansereau (Eds.), *Research in multi-level issues* (Vol. *4*, pp. 11–73). Oxford, England: Elsevier.
Neubert, M. J., Kacmar, K. M., Carlson, D. S., Chonko, L. B., & Roberts, J. A. (2008). Regulatory focus as a mediator of the influence of initiating structure and servant leadership on employee behavior. *Journal of Applied Psychology*, *93*(6), 1220–1233.
Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, *39*(3), 607–634.
Parker, S. K., & Sprigg, C. A. (1999). Minimizing strain and maximizing learning: The role of job demands, job control, and proactive personality. *Journal of Applied Psychology*, *84*(6), 925–939.
Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.
Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *Leadership Quarterly*, *15*(3), 329–354.
Scholl, W. (1999). Restrictive control and information pathologies in organizations. *Journal of Social Issues*, *55*(1), 101–118.
Schwartz, S. H. (1999). A theory of cultural values and some implications for work. *Applied Psychology: An International Review*, *48*(1), 23–47.
Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, *30*(6), 933–958.
Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage Publications Ltd.
Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of Management Journal*, *49*(6), 1239–1251.
Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, *88*(3), 500–517.
Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal*, *45*(6), 1137–1148.
Unsworth, K. L. (2001). Unpacking creativity. *Academy of Management Review*, *26*(2), 289–297.
Wagner, J. A., III. (1994). Participation's effects on performance and satisfaction: A reconsideration of research evidence. *Academy of Management. The Academy of Management Review*, *19*(2), 312–330.
Wallace, C., & Chen, G. (2006). A multilevel integration of personality, climate, self-regulation, and performance. *Personnel Psychology*, *59*(3), 529–557.
Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, *18*(2), 293–321.
Zhang, X., & Bartol, K. M. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of Management Journal*, *53*(1), 107–128.
Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, *44*(4), 682–696.

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